



January 24, 1992

Glynda J. Steiner, P.E.
Kennedy/Jenks Consultants
530 South 336th
Federal Way, WA 98003

**Subject: South Tacoma Field -- Chemicals of Concern for
Surface Soils**

Dear Ms. Steiner:

At our meeting on January 15, 1992, the approach to be used by the U.S. Environmental Protection Agency (EPA) to conduct the risk assessment for surface soils was presented (Attachment 1). Also discussed was the additional air modelling needed to evaluate the inhalation pathway in the risk assessment. Possible approaches to conducting the additional air modeling were described in a handout summarizing the approaches that would be acceptable to EPA.

It was agreed during our meeting that Mike Ruby (Envirometrics, Inc.) would closely coordinate with Bill Ryan (EPA) regarding the technical aspects of the air modelling. Once the technical issues had been discussed and resolved and the potentially responsible parties (PRPs) had settled on an approach, a meeting would be held with EPA to outline the specifics of that approach. Please inform me as soon as possible when the PRPs would be ready to schedule such a meeting. Please keep in mind that the modeling needs to be completed in time for incorporation into the risk assessment.

Key to the conduct of the risk assessment is the identification of chemicals of concern. EPA has outlined the criteria for selection of chemicals of concern for surface soils and air. The criteria has been slightly modified from that described in Attachment 1 and distributed at the January 15th meeting. The criteria and the chemicals of concern are enclosed. (Please be aware that evaluation of the dioxin/furan results has not been completed, and EPA has not yet determined how and if those results will be used in the risk assessment.)

For the chemicals of concern for air, shortly you will receive a table listing the concentrations that are equivalent to the unacceptable risk level thresholds against which chemicals of concern can be screened in the air modeling.

Please be aware that EPA has yet to develop chemicals of concern for the subsurface soils, groundwater and ecological risk

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assessment. It may very well be the case that chemicals in surface soils that do not exceed the criteria for selection of chemicals of concern for the human health risk assessment may be included in the list of chemicals of concern for the ecological risk assessment.

Next week EPA will provide you with an outline of the graphical presentations and data manipulation requirements to support the risk assessment. I appreciate your willingness to closely coordinate with us and provide support for the risk assessment.

If you have any questions or concerns, please call me at 553-6519.

Sincerely,



Christine Psyk
EPA Site Manager

Enclosures

cc: Kevin Oates, EPA Superfund
Pat Cirone, EPA ESD
Bill Ryan, EPA ESD
Marge Norman, ICF Technology, Inc.
Peter Brooks, Washington Department of Ecology
Mark Stromberg, Burlington Northern Railroad

**CRITERIA USED IN SELECTING
CHEMICALS OF CONCERN IN SURFACE SOILS AND AIR
FOR THE SOUTH TACOMA FIELD (STF) SITE**

The criteria outlined below were used to identify the potential chemicals of concern in the surface soils and air of the South Tacoma Field Site. First, the site data were sorted by geographic area. Then the criteria were applied to the data from each area. The outcome of the evaluation is a list of chemicals of concern for each area of the site. If a chemical was determined to be of concern in one or more areas, it was placed on the site-wide list of chemicals of concern.

A. SELECTION OF CHEMICALS OF CONCERN FOR SOIL

1. Comparison to Detection Limits. Any chemical present in a geographic area at a level above its detection limit was retained for further evaluation as a potential chemical of concern.
2. Comparison to Risk-Based Goals (RBGs). The concentrations of each detected chemical at each geographic area were compared to the Region 10 Risk Based Goal (RBG) for that chemical. For soil, the Region 10 RBGs are concentrations equivalent to a 10⁻⁷ risk for carcinogens or a Hazard Quotient of 0.1 for non carcinogens. If the chemical had no more than three samples that exceeded its RBG, the chemical was eliminated as a potential chemical of concern for that geographic area.
3. Chemicals without an RBG. Detected chemicals that did not have an RBG were handled in one of the following three ways:
 - a. Comparison with Background Samples. The maximum detected concentration of the chemical was compared to the maximum concentration detected in the background samples for that chemical. Chemicals that were detected no more than once at a concentration greater than the maximum background value were eliminated as potential chemicals of concern.
 - b. Comparison with Allowable Dietary Intake Levels. The maximum detected concentration of chemicals such as calcium, iron, magnesium, potassium, and sodium were compared to their allowable dietary intake levels. If the maximum detected concentration was lower than the allowable dietary intake level, the chemical was deleted as a potential chemical of concern.
 - c. Comparison of Lead to 500 ppm Cleanup Standard. Given OSWER Directive #9355.4-02 for lead, lead was selected as a chemical of concern only if the concentrations in a geographic area were greater than 500 ppm.

B. SELECTION OF CHEMICALS OF CONCERN FOR AIR

The chemicals of concern identified for soils were screened for selection as chemicals of concern for air by determining the availability of toxicity parameters for the inhalation pathway. If a chemical of concern in soil has an EPA inhalation toxicity factor (reference dose of cancer slope factor), it was selected as a chemical of concern for air.

POTENTIAL CHEMICALS OF CONCERN IN SURFACE SOILS
AT THE SOUTH TACOMA FIELD SITE (REVISED 1/22/92)

SITE-WIDE

Aluminum*
Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Cobalt**
Lead
Manganese
Mercury
Zinc
PAHs, carcinogenic^a
PCBs

* EPA toxicity
parameters not
available

** EPA toxicity factor
under review

Dismantling Yard

Aluminum
Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Cobalt
Lead
Mercury
Zinc
PCBs
PAHs, carcinogenic^a

TIP Management

Cobalt
PAHs, carcinogenic^a

BY AREA

Airport

Aluminum
Arsenic
Cadmium
Cobalt
Chromium
Lead
Mercury
PAHs, carcinogenic^a

Amsted

Aluminum
Antimony
Arsenic
Beryllium
Cadmium
Cobalt
Chromium
Copper
Lead
Manganese
Mercury
Zinc
PAHs, carcinogenic^a

Railyard

Antimony
Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
PCBs
PAHs, carcinogenic^a

Former Swamp/Lake

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
PAHs, carcinogenic^a

^a Carcinogenic PAHs: Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene.

POTENTIAL CHEMICALS OF CONCERN IN AIR
AT THE SOUTH TACOMA FIELD SITE (REVISED 1/22/92)

SITE-WIDE

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Manganese
Mercury
PAHs, carcinogenic^a

* EPA toxicity factor
under review

BY AREA

Dismantling Yard

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Mercury
PAHs, carcinogenic^a

TIP Management

Cobalt
PAHs, carcinogenic^a

Airport

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Mercury
PAHs, carcinogenic^a

Amsted

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Manganese
Mercury
PAHs, carcinogenic^a

Railyard

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Mercury
PAHs, carcinogenic^a

Former Swamp/Lake

Arsenic
Beryllium
Cadmium
Chromium
Cobalt
PAHs, carcinogenic^a

^a Carcinogenic PAHs: Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene.